**K-5 Math Lesson Plan**

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| **Teacher:** Herbin, Tennyson, Harris, Williams | | | **Grade: 5th** | | | **Date(s)**: August 2012 |
| **Unit Title:** Understanding the Decimal Place Value System | | | | **Corresponding Unit Task:** Lesson 2  2012 Summer Olympics—Displaying Decimals  (Teach prior to assessment task 1) | | |
| **Essential Question(s): 5.NBT.3a**  How can I read and write decimal numbers to thousandths using base-ten, number name, expanded form? | | | | | | |
| **Materials/Resources** | | | | **Essential Vocabulary** | | |
| **Teacher:**  Chart paper, dice, Expanded Form chart, Computer with Internet Capabilities and projector | | **Student:**  Dice, Expanded Form chart (see end of plan), sentence strips (optional), math journals, base ten blocks (intervention) | | | place value  period  expanded form  base-ten numeral  number name | |
| **Learning Experience** | | | | | | |
| **8 Mathematical Practices:**  √ 1. Make sense of problems and persevere in solving them.  √ 2. Reason abstractly and quantitatively.  3. Construct viable arguments and critique the reasoning of others.  √ 4. Model with mathematics.  √ 5. Use appropriate tools strategically.  √ 6. Attend to precision.  7. Look for and make use of structure.  8. Look for and express regularity in repeated reasoning. | **Common Core State Standards:**  **5.NBT.3a**  Read and write decimal numbers to thousandths using base-ten, number name, expanded form. | | | | | |
| **I Can Statement(s):**   * I can read decimal numbers to the thousandths using base-ten numerals. * I can read decimal numbers to the thousandths using number names. * I can read decimal numbers to the thousandths using expanded form. * I can write decimal numbers to the thousandths using base-ten numerals. * I can write decimal numbers to the thousandths using number names. * I can write decimal numbers to the thousandths using expanded form. dths using base-ten numerals.ams * I can use base-ten numerals to form decimal numbers to the thousandths using base-ten numerals. * I can use base-ten numerals to form decimal numbers to the thousandths using number names. * I can use base-ten numerals to form decimal numbers to the thousandths using expanded forms. | | | | | |
| **Activating Strategy/Hook:** (How will students become cognitively engaged and focused?)  Using <http://studyjams.scholastic.com/studyjams/jams/math/numbers/place-value.htm> (Study Jams, click on math, click on numbers, then click on place value), watch video. Pause the video after each period (group of the three numbers) to discuss their value. For example, in the units period the number 824, explaining that 4 is in the ones place with a value of four. The 2 is in the tens places with a value of 20. The 8 is in the hundreds place with a value of 800. Continuing throughout each period stopping at the hundred thousands. | | | | | |
| **Teacher Directed:**  Gather students together to review whole number place value. The teacher will create an anchor chart for the classroom while students will create their own chart in their math journals or on sentence strips. Share and discuss the different period and values of each number or set of numbers as a class.  *Examples for anchor charts are as follows*:  The following chart could be drawn on chart paper or students could fold sentence strips into 6 equal pieces and draw chart.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Hundred Thousands | Ten Thousands | Thousands |  | Hundreds | Tens | Ones | | 6 | 2 | 8 | , | 8 | 2 | 4 |     Place Value Houses  units  thousands  sands   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Hundred Thousands | Ten Thousands | Thousands |  | Hundreds | Tens | Ones | | 6 | 2 | 8 | , | 8 | 2 | 4 |   Teacher will use place value charts to demonstrate number name (word form) and expanded form. First, the teacher will read the base ten numeral from the chart emphasizing the specific periods separated by a comma. Then the teacher will write the number name for the example in the chart.  Introduce *Expanded Form Place Chart* to explain expanded form. Have students place example number into correct place value spaces. Then model how to bring individual digits down into the space to represent the value of that specific number as well as placing it in the open space to show expanded form.  *EXAMPLE*   |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | \_8\_ |  | \_5\_ |  | \_1\_ | , | \_4\_ |  | \_3\_ |  | \_7\_ | | Hundred Thousands |  | Ten Thousands |  | Thousands |  | Hundreds |  | Tens |  | Ones | | 8 00,000 | + | 5 0,000 | + | 1,000 | + | 400 | + | 30 | + | 7 | | (8 x 100,000) | + | ( 5 x 10,000) | + | ( 1 x 1,000) | + | ( 4 x 100) | + | ( 3 x 10) | + | ( 7 x 1) | | | | | | |
| **Guided Practice:**  In small groups or pairs, have students roll dice and place the number into a chosen place value area until all spaces are filled beginning with 3 digit numbers and building up to a 6 digit number. (Note: various types of dice can be used---multiple sided die)  After all students have completed a row to create a number, the teacher will guide students to fill in the missing information on the expanded form chart to identify numbers in three different forms (base ten--standard, number name--word, expanded). | | | | | |
| **Independent Practice:**  Teacher will dictate which place a random number should be written (provided below). Follow this form for the all of the place value spaces as follows.   1. Place a 9 in the ones places. 2. Place a 7 in the hundreds place. 3. Place a 3 in the hundred thousands place. 4. Place a 6 in the thousands place. 5. Place a 2 in the tens place. 6. Place a 0 in the ten thousands place.   Students will then fill in the expanded form chart on their own and write the number name for this generated number. (306,729)   |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | \_3\_ |  | \_0\_ |  | \_6\_ | , | \_7\_ |  | \_2\_ |  | \_9\_ | | Hundred Thousands |  | Ten Thousands |  | Thousands |  | Hundreds |  | Tens |  | Ones | | 3 00,000 | + | 00,000 | + | 6,000 | + | 700 | + | 20 | + | 9 | | (3 x 100,000) | + | ( 0 x 10,000) | + | (6 x 1,000) | + | ( 7 x 100) | + | ( 2 x 10) | + | ( 9 x 1) |   *ANSWER:*  **Base Ten**: 306,729  **Number Name**: Three hundred six thousand, seven hundred twenty-nine.  **Expanded**: 3 x 100,000 + 6 x 1,000 + 7 x 100 + 2 x 10 + 9 x 1 OR  300,000 + 6,000 + 700 + 20 + 9  Students will then create their own number and fill in the chart as well as writing the number name and expanded form. | | | | | |
| **Closing/Summarizing Strategy:**  In their math journals, students will explain how they can read and write numbers using the base ten, number name, and expanded form using 394,148   |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | \_3\_ |  | \_9\_ |  | \_4\_ | , | \_1\_ |  | \_4\_ |  | \_8\_ | | Hundred Thousands |  | Ten Thousands |  | Thousands |  | Hundreds |  | Tens |  | Ones | | 3 00,000 | + | 90,000 | + | 4,000 | + | 100 | + | 40 | + | 8 | | (3 x 100,000) | + | ( 9 x 10,000) | + | ( 4 x 1,000) | + | ( 1 x 100) | + | ( 4 x 10) | + | ( 8 x 1) |   *ANSWER:*  **Base Ten**: 394,148  **Number Name**: Three hundred ninety-four thousand, one hundred forty-eight.  **Expanded**: 3 x 100,000 + 9 x 10,000 + 4 x 1,000 + 1 x 100 + 4 x 10 + 8 x 1  OR  300,000 + 90,000 + 4,000 + 100 + 40 + 8 | | | | | |
| **Differentiation Strategies** | | | | | | |
| **Extension**  Using the following numbers, students can rearrange the digits in the number to create the largest or smallest number possible and then write that number in the three forms (base ten—standard, number name—word, and expanded).   1. 432,109 2. 775,932 3. 190,492 | | | **Intervention**  • The students will need base 10 blocks to model numbers that the teacher lists on the board in base ten (standard) form.  • Review with the students what each base 10 block represents when we are referring to them as models of whole numbers. (i.e. small cubes represent the number of ones in a number, the rods represent the number of tens in a number, flats represent the number of hundreds, and the large cube represents the number of thousands). Be sure to ask them what they think each block represents. This should not be the first time that they have seen them.  • After reviewing, the teacher will write each of the following numbers on the board one at a time. She/he will ask the students to model or show what the number actually looks like using the base 10 blocks.  http://www.mathatube.com/images/baseten-blocks-97.gif  Other examples are:  203   485   1270    2069  • Have a student draw the model that they created using the base 10 blocks beside the number listed on their whiteboard. Remember: There could be more than one way to model a number. (i.e. 485 – 4 hundreds, 7 tens, 15 ones or 4 hundreds, 8 tens, 5 ones.)  • By doing this strategy, the students are not just thinking symbolically with numbers, but they are thinking concretely first, then moving to a pictorial representation of numbers. | | | **Language Development**  To help students get a better visual, have students chart a flip top foldable. Students will fold a piece of paper hot dog style (length wise) and then cut 7 equal flaps (6 cuts). On the top of the flap, students should write the place (For example: Hundreds, Tens) and under the flap, students can write the digit for the correct place. Teachers can have students to use these to grasp the place and value of each number.  http://www.scsk12.org/SCS/curriculum_guides/6-12_Math_Webpage/ms%20pages/foldableexamples_files/image002.jpg |
| **Assessment(s):**  Collect math journals to check for understanding. | | | | | | |
| **Teacher Reflection:** (Next steps?)  • What went well?  • Student understanding/misconceptions.  • Specific notes about students’ thinking.  • What do I need to reteach/review tomorrow or in the future?  • New ideas or changes for next time? | | | | | | |

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| Hundred Thousands |  | Ten Thousands |  | Thousands |  | Hundreds |  | Tens |  | Ones |  | Tenths |  | Hundredths |  | Thousandths |
| \_ 00,000 | + | \_ 0,000 | + | \_,000 | + | \_00 | + | \_0 | + | \_ | + | .\_ | + | .0\_ | + | .00\_ |
| ( \_ x 100,000) | + | ( \_ x 10,000) | + | ( \_ x 1,000) | + | ( \_ x 100) | + | ( \_ x 10) | + | ( \_ x 1) | + | ( \_ x .1) | + | ( \_ x .01) | + | ( \_ X .001) |
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| Hundred Thousands |  | Ten Thousands |  | Thousands |  | Hundreds |  | Tens |  | Ones |  | Tenths |  | Hundredths |  | Thousandths |
| \_ 00,000 | + | \_ 0,000 | + | \_,000 | + | \_00 | + | \_0 | + | \_ | + | .\_ | + | .0\_ | + | .00\_ |
| ( \_ x 100,000) | + | ( \_ x 10,000) | + | ( \_ x 1,000) | + | ( \_ x 100) | + | ( \_ x 10) | + | ( \_ x 1) | + | ( \_ x .1) | + | ( \_ x .01) | + | ( \_ X .001) |